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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/560,832

02/28/2007

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EXAMINER

HILTON, ALBERT

ART UNIT

PAPER NUMBER

1716

MAIL DATE

DELIVERY MODE

03/09/2011

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/560,832	Applicant(s) KAMATA ET AL.	
	Examiner Albert Hilton	Art Unit 1716	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 6-8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 9 and 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1716

DETAILED ACTION

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moen (US Patent No. 3273757).

1. Regarding claim 1, Moen describes a nozzle (**liquid dispenser 10**) comprising a receiver (**spool 56**); a first nozzle part (**barrel 22**) formed in a cylindrical shape, the first nozzle part (**22**) communicating with the receiver (**56**), the first nozzle part (**22**) being coaxial with and separate from the receiver (**56**); and a second nozzle part (**tip insert 32**) formed in a cylindrical shape having an inner diameter smaller than that of the first nozzle part (**22**), and an outer diameter equal to that of the first nozzle part (**22**), the second nozzle part (**32**) being connected to the first nozzle part (**22**), wherein the second nozzle part (**32**) is disposed nearer to the coating object than the first nozzle part (**22**), and wherein between the first (**22**) and second (**32**) nozzle parts there is

Art Unit: 1716

formed a step (see A in diagram 1 below) protruding from the inner surface of inwardly between the first nozzle part (22) toward the inside of and the second nozzle part (32) (Moen: column 4, lines 8-10, 33-35, and Fig. 2).

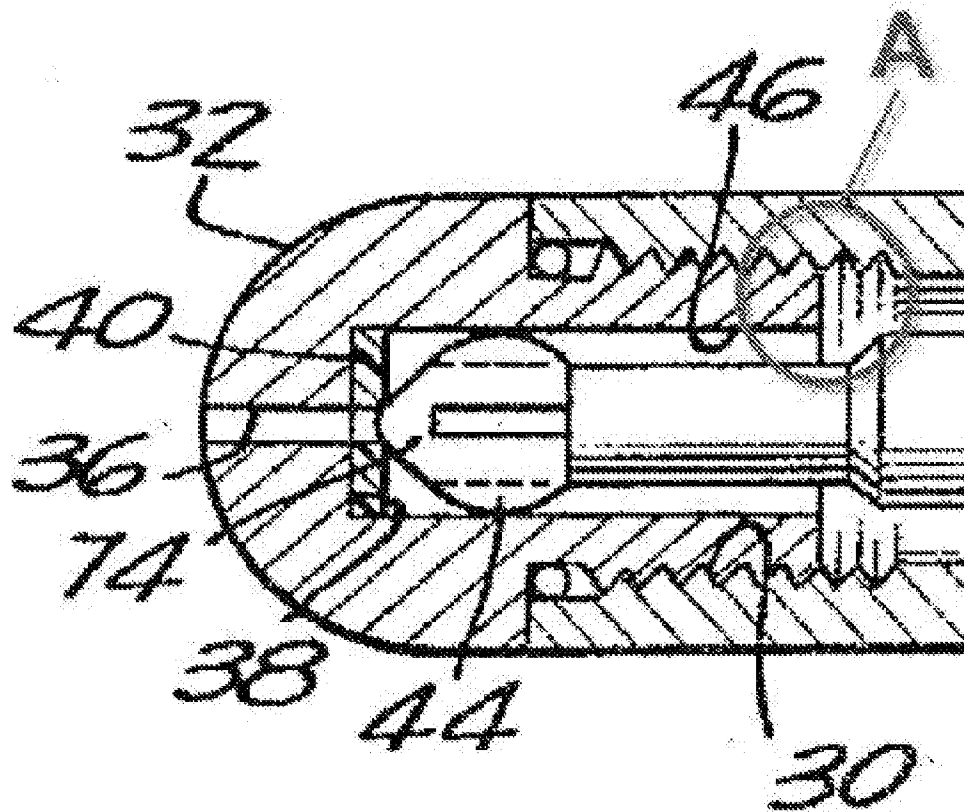


Diagram 1, reproduced with modification from Moen, Fig. 2.

2. Further regarding claim 1, the first (22) and second (32) nozzle parts are not always in open communication with each other, as the connection between the two is sometimes blocked by a conical valve obturator (74) when the valve is in an opened position (Moen: column 5, lines 4-24 and Figs. 6, 10). Moen teaches that such a valve

Art Unit: 1716

system functions to interrupt the flow of material and to prevent adhesive material dispensed from the nozzle from setting inside the nozzle.

3. However, the elimination of an element and its function does not distinguish a claimed invention from the prior art where said function is not desired (see MPEP 2144.04: Elimination of a Step or an Element and its Function). One of ordinary skill in the art at the time of the invention, desiring to use the nozzle of Moen to dispense a continuous flow of material, would therefore have found it obvious to remove the obturator (**74**), with the ordinary and expected result that such a modification would allow for an uninterrupted flow of material.

4. Further regarding claim 1, Moen discloses a nozzle (**liquid dispenser 10**) comprising a first (**barrel 22**) and a second (**tip insert 32**) part (Moen: column 4, lines 8-10, and Fig. 2), but does not specify the precise ratio of the length (**L**) of the first part (**22**) to the length (**I**) of the second (**32**) part. However, the use of a first part (**22**) of length **L** and a second part (**32**) of length **I** such that $8 \leq L/I \leq 10$ represents an ordinary change in the shape and proportion of the parts that would not alter the function of the nozzle in a patentably distinct way over the prior art (see MPEP 2141.01).

5. One of ordinary skill in the art at the time of the invention would find it obvious to make use of nozzles with a broad variety of different length ratios. Similarly, while Moen does not disclose the precise ratio of the diameter (**D**) of the first part (**22**) to the diameter (**d**) of the second (**32**) part, one of ordinary skill in the art would have found it obvious that nozzles satisfying the condition $4 \leq D/d \leq 6$ could be used, as well as

Art Unit: 1716

nozzles that simultaneously satisfy the conditions $8 \leq L/l \leq 10$ and $4 \leq D/d \leq 6$ without altering the function of the nozzle in a patentably distinct way over the prior art.

6. Further regarding claim 1, Moen does not explicitly describe the use of a coating nozzle that dispenses a coloring agent having a viscosity of less than 10 mPa*s.

However, the use of such coloring agent in the nozzle of Moen represents a claim of intended use that does not patentably distinguish the structure of the claimed invention from the structure of the Moen nozzle (see MPEP 2114).

7. Regarding claim 2, the step (A) is formed flat in a direction crossing at right angles in a direction in which the dispensed fluid flows in the first (22) and second (32) nozzle parts.

8. Regarding claim 3, the step (A) in the nozzle of Moen is formed flat in a direction crossing both a direction in which the dispensed fluid flows in the first (22) and second (32) nozzle parts and a direction crossing at right angles the direction in which the fluid flows.

9. Regarding claim 4, the step (A) in the nozzle of Moen is formed on the first nozzle part (22).

10. Regarding claim 5, the first (22) and second (32) nozzle parts in the nozzle of Moen are connected coaxially with each other.

Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moen as applied to claims 1-8 above, and further in view of Rau (US Patent No. 4897439).

Art Unit: 1716

11. Regarding claim 9, Moen does not specifically disclose what materials the second nozzle part of the nozzle is composed of. However, as Rau teaches, a variety of composite materials are used to fabricate apparatus used therein (Rau: column 1, lines 17-31). Further Rau teaches it is well-known in the art that polyether ketone (PEK) is a material with a variety of useful properties, such as high tensile strength and good resistance to wear, creep, and corrosion (Rau: column 7, lines 42-51 and column 2, lines 8-18). One of ordinary skill in the art at the time of the invention motivated by a need to improve the durability of the nozzle of Moen, would have found it obvious to manufacture said second nozzle part out of PEK, with the expected result that the resulting second nozzle part would be capable of dispensing liquids without corrosion due to chemical exposure.

12. Regarding claim 10, Moen discloses a nozzle (**liquid dispenser 10**) comprising a receiver (**spool 56**); a first nozzle part (**barrel 22**) formed in a cylindrical shape, the first nozzle part (**22**) communicating with the receiver (**56**), the first nozzle part (**22**) being coaxial with and separate from the receiver (**56**); and a second nozzle part (**tip insert 32**) formed in a cylindrical shape having an inner diameter smaller than that of the first nozzle part (**22**), and an outer diameter equal to that of the first nozzle part (**22**), the second nozzle part (**32**) being connected to the first nozzle part (**22**), wherein the second nozzle part (**32**) is disposed nearer to the coating object than the first nozzle part (**22**).

13. Moen does not specifically disclose what materials the second nozzle part (**132**) is composed of. However, as described in paragraph 9 above, one of ordinary skill in

Art Unit: 1716

the art at the time of the invention, motivated by a need to improve the durability of the nozzle of Moen, would have found it obvious to manufacture said second nozzle part out of PEK, with the expected result that the resulting second nozzle part would be capable of dispensing liquids without corroding due to chemical exposure.

14. Further regarding claim 10, Moen discloses a nozzle (**liquid dispenser 10**) comprising a first (**barrel 22**) and a second (**tip insert 32**) part (Moen: column 4, lines 8-10, and Fig. 2), but does not specify the precise ratio of the length (**L**) of the first part (**22**) to the length (**I**) of the second (**32**) part. However, the use of a first part (**22**) of length **L** and a second part (**32**) of length **I** such that $8 \leq L/I \leq 10$ represents an ordinary change in the shape and proportion of the parts that would not alter the function of the nozzle in a patentably distinct way over the prior art (see MPEP 2141.01).

15. One of ordinary skill in the art at the time of the invention would find it obvious to make use of nozzles with a broad variety of different length ratios. Similarly, while Moen does not disclose the precise ratio of the diameter (**D**) of the first part (**22**) to the diameter (**d**) of the second (**32**) part, one of ordinary skill in the art would have found it obvious that nozzles satisfying the condition $4 \leq D/d \leq 6$ could be used, as well as nozzles that simultaneously satisfy the conditions $8 \leq L/I \leq 10$ and $4 \leq D/d \leq 6$ without altering the function of the nozzle in a patentably distinct way over the prior art.

16. Further regarding claim 10, Moen in view of Rau does not explicitly describe the use of a coating nozzle that dispenses a coloring agent having a viscosity of less than 10 mPa*s. However, the use of such coloring agent in the nozzle of Moen in view of Rau represents a claim of intended use that does not patentably distinguish the

Art Unit: 1716

structure of the claimed invention from the structure of the nozzle of Moen in view of Rau (see MPEP 2114).

Response to Arguments

Applicant's arguments filed 1/31/2011 have been fully considered but they are not persuasive.

17. Regarding claims 1 and 10, applicant argues that the lengths and diameters recited yield unexpected and patentably distinct results over the prior art. Applicant submits that the results presented in Tables 1 and 2 of the specification are precise enough to demonstrate the advantages over the prior art.

18. The examiner disagrees, and maintains that the results presented in applicant's specification are based on relative subjective judgments ("some adhesion," "little adhesion," "practically uniform," etc.) that are not able to be evaluated by the examiner. The examiner maintains that the data presented do not establish a sufficient basis for evaluating if the claimed improvement meets the threshold of an unexpected and patentably distinct result.

19. Applicant further argues that the use of a coating liquid having a viscosity of less than 10 mPa*s patentably distinguishes the claims from the prior art. The examiner submits that the recitation of the viscosity of the liquid used in the nozzle apparatus of the claimed invention represents a claim of intended use that does not patentably distinguish the structure of the nozzle from that of the prior art (see MPEP 2114).

Conclusion

Art Unit: 1716

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert Hilton whose telephone number is (571)-270-5519. The examiner can normally be reached on Monday through Friday from 8:00 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571)-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Albert Hilton/
Examiner, Art Unit 1716

/Parviz Hassanzadeh/
Supervisory Patent Examiner, Art Unit 1716